



Physics 220

The following learning targets represent the major concepts studied and assessed in this course.

Upon completion of this course students should be able to

- Summarize a physical situation with a verbal description and visual drawing.
- Assess a physical situation with a conceptual understanding of the fundamental laws of physics.
- Analyze a physical situation with appropriate mathematical formulation of fundamental laws of physics.

Semester 1:

Unit 1: Math with Measured Numbers

- Units and measurements
- Significant figures
- Unit Conversions

Unit 2: One Dimensional Motion

- 1-D motion equations
- Motion graphs

Unit 3: Vectors

- Representing vectors with numbers
- Adding and subtracting vectors

Unit 4: Two Dimensional Motion

- 2-D motion equations
- Projectile motion

Unit 5: Forces

- Newton's second law of motion
- Types of Motion
- Friction
- Calculating friction

Unit 6: Uniform Circular Motion

- Centripetal Force
- Gravity

Semester 2:

Unit 7: Energy

- Calculating work
- Work and energy
- Kinetic energy
- Potential energy
- Conservation of energy
- Power

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The following learning targets represent the major concepts studied and assessed in this course.

Semester 2:

Unit 8: Momentum

- Conservation of momentum
- Inelastic collisions

Unit 9: Rotational Motion

- Angular variables
- Centripetal force
- Torque
- Newton's 2nd Law for Rotation
- Torque

Unit 10: Angular Momentum and Equilibrium

- Equilibrium
- Angular momentum
- Conservation of angular momentum

Unit 11: Fluid Mechanics

- Pressure
- Buoyant force
- Fluids in motion
- Continuity equation
- Bernoulli equation

Unit 12: Oscillations

- Oscillations
- Mass on a spring